24.5.17

Original/Duplicate/Triplicate
CONTRACT CERTIFICATE
(For Other Works)

No. & Final Bill Date……2017

Zone:**BBMP,Yelahanka** Division:**BBMP, Byatarayanapura** Sub-Division:**BBMP, Kodigehalli**

Bill Received No. Dated Divisional / Sub-Divisional Cash Book Voucher No……Dated……

Job Code: 007-17-000020

Schedule Docket No. Head of Account: P1802 Est.Cost: Rs.25.00 Lakhs D.R.NO.:

Name of Work : Construction of Two Pure Drinking Water Units in Ward No. 07, Byatarayanapura.

Name of Contractor and Full Address: Sri R. Vasanth, Contractor, # 20, A T Layout, Nagashettahalli, RMV 2nd Stage, Bangalore - 94.

Reference to Agreement No. BBMP/EE/BTP/WO/241/2016-17 Date: 25.03.2017

Certified that the measurements were taken by me on: ~~30.06.2017~~ and recorded of Pages **257986** to **257996** of measurement Book No. **2580/2014-15** and that work is satisfactorily executed.

Contractor Officer-in-charge of work

Certified that measurement were taken by me on …/…/2017 and found correct. The work is satisfactorily executed.

Certified that the quantities of materials shown in column 3 of Accont have been actually brought to site of the work and the contractor has not previously received any advance on this security. These materials are of and imperishable nature and are all required for immediate use on the work in connection with items for finished work have been agreed upon. A normal agreement signed and executed by the contractor is recorded in the office.

Sub-Division Officer

Assistant Executive Engineer, Kodigehalli Sub Division, Yelahanka Zone, B.B.M.P, Bangalore.

1) Total value of work done or supplies made as per account within Amount Total - 2259514-00
2) Deduct amount to be held in reserve being……Percent Rs……
3) " Balance
4) Deduct Payment:
   a) Amount of previous payment as in the Office Cash Book Voucher No……Dated……S.D.No…… adjusted towards cash advance recovery of
   b) Payments cost store or other material supplied.
   Now made recovery of amount creditable to this /other work
   Amount paid on this bill Cheque/Cash.
5) Balance being unpaid value of work done held in reserve.
6) Deduct cash advance made on the Office cash Book Voucher No…… dated ……less adjustments.
7) Net amount due to or from Contractor unadjustments items.
8) Advance to Contractor for materials brought to site (as detailed) within
9) Value of Government materials supplied.

IT	22595-00
CGST	22595-00
SGST	22595-00
Cess	22595-00
CBT	2260-00
LR.	4519-00
Adj:	97159-00
Total:	2162355-00

Total amount adjusted

Contractor's Signature

Received Rs……(in words)……
……
by cash and by adjustment of Payment as per memorandum
(in final settlement of all demands)

(For use in the Office)

Witness
1
2

Stamp

Dated Signature of Contractor

Paid by me by Cheque No……Dated……
Cash Rs……
Dated……
Initials of Officer making payment

2259514-00
97159-00
2162355-00
Rs. Twenty One Lakhs Sixty two Thousand three hundred fifty five

Executive Engineer

Sl. No.	Items grouped under sub-Heads and Sub-Works of the Estimate Description	Unit
1	KSRB 2-1.1: Earth work in surface excavation in **ordinary soil** for leveling and lowering the ground manually (other than foundation of buildings, culverts, road drains and trenches of pipe line and cables) and removing the excavated stuff to a distance not exceeding 50m and lift upto 1.5m, excavated surface leveled and neatly dressed, disposed earth to be leveled after breaking of clods and neatly dressed as per specifications, Specification No KBS 2.1(a) / 2.3.1, **No. 5 / Item No. 2.1 / PWD SR 2015-16**	Cum
2	KSRB 2-2.2 : Earth work excavation for foundation of buildings, culverts water supply, sanitary line and electrical conduits either in pits or in trenches 1.5m and above in width, **in Hard soil** not exceeding 1.5m, in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m, after breaking of clods complete as per specifications, specification, No, KBS 2.1(a) / 2.3.5, **Page No. 5 / Item No. 2.3 / PWD SR 2015-16**	Cum
3	Providing and laying in position plain cement concrete of **mix 1:4:8 with OPC cement @ 180 kgs with 40mm** and down size graded granite metal coarse aggregates @ 0.85cum and fine aggregares @ 0.57 cum machine mixed, concrete laid in layers not, exceeding 15cms, thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
4	Providing and constructing granite / trap / basalt size stone masonry in **foundation with cement mortar 1:6**, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
5	Providing and constructing granite / trap / basalt size stone masonry in **basement with cement mortar 1:6**, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
6	Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
7	KSRB 4-1.6 : Providing and laying in position plain cement concrete of **mix 1:2:4 with cement @ 240 kgs with 20mm** and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15cms, thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications, specification. No. KBS 4.1,4.2. **No. 12/ Item No. 4.6 / PWD SR 2015-16**	Cum
8	Providing and constructing precast concrete solid blocks with compressive strength not les than 35 Kg/sqm with cement mortar 1:4 masonry (quoin, Jamb, closer blocks) with solid concrete blocks of size 40x20x20 cms conforming to I.S: 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing etc.,	Sqm
9	KSRB 15.3.6: Providing 15m thick cement plaster in single coat with cement mortar 1:6 to brick masonry including rounding off corners wherever reuired smooth rendering, Providing and removing scaffolding, including cost of materials, labour. Curing complete as per specifications. **Page No. 97 / Item No. 15.13 / PWD SR 2016-17**	Sqm
10	KSRB 7.8 : Providing and fixing in position in cement concrete 1:3:6 steel glazed windows and ventilators side hung/top hung 2/3 openable 1/3 fixed as per approved drawings using Z angles of 25x33x3mm, weighing 1.419Kg/m both for outer and inner frames and central mullion section of size 25x46x3mm weighing 2.28Kg/m all duly providing T section 19x19x3mm weighing 0.839 kg/m for glazing of windows not more than 34 cms. c to c including providing and fixing 4mm thick reeded glass with teakwood beading of required size, all steel section should confirm to I.S. 7452:1990, 4nos, of holdfasts of approved size section should be cut to length welded and electrically grinded subdividing frames of unit shall be tenonned and revetted into the frames electrically. All the steel surface shall be thoroughly cleaned free of rust and painted with one coat of anti-corosive paint and finishing two coats of ready mix paint of approved colour and make including cost of materials, fixtures, labour and HOM of machinery complete as per specifications. **Page No. 37/ Item No. 7.8/ PWD SR 2012-13**	Sqm

Previous Measurement		Present Measurement			Total Upto Date	
Qty	Rate Rs. P.	Qty	Rate Rs. P.	Amount	Qty	Cost
-	-	4.20	140.00	588.00	4.20	588.00
-	-	21.71 ~~21.70~~	260.00	~~5642.00~~ 5644-	21.71 ~~21.70~~	~~5642.00~~ 5644-
-	-	8.53	4700.00	40091.00	8.53	40091.00
-	-	12.06	3800.00	45828.00	12.06	45828.00
-	-	5.14	4500.00	23130.00	5.14	23130.00
-	-	21.71	110.00	2388.10	21.71	2388.10
-	-	2.75	5100.00	14025.00	2.75	14025.00
-	-	0.00	920.00	0.00	0.00	0.00
-	-	0.00	140.00	0.00	0.00	0.00
-	-	0.00	3100.00	0.00	0.00	0.00

11	Fabricating, supplying & erecting M.S. angular Truss of span upto 10m. The bottom & top member is provided with 50x50x6mm double equal angles, welded back to back and in between top & bottom line, in areas of mid section is provided with 50x50x6mm equal single angle for vertical and inclined members and at supporting ends 40x40x5mm single angle is provided. All the members are welded together with 6mm gusset plate as per Drawing No.CBS/ SD/K-Mantap/9/MND/97. The entire truss is anchored in RCC column by using 4 Nos. of M.S. anchor bolts at each support, with 10mm thick base plate and shoe plate.The work includes cutting, straightening, placing in position of M.S angle and wleding wherever necessary, and applying one coat of red oxide primer coat to all the members including cost of all materials, labour charges, & hire charges of machineries for cutting, welding, grinding & erection equipments, etc., complete as per specification. (Page No. 40 Item No. 7.30 of CSR 2015-16).	Kgs
12	Providing and fixing self-supported, ribbed, high quality, high grade (D:350 MPA Yst Min), pre- painted Galvalume steel roof sheet, coated with bare Galvalume coating AZ 150, @ 150 gms/Smtr 55%AL,45%Zn) by hot dip process , of total coated thickness as specified for different spans with a tolerance of +/- 0.02 mm, according to technical specification confirming to A 792, with NCCA II-1, or ECCA T4 Pencil hardness HB, NCCA standard T-Bend test. The roof should be fastened to the gutter beam, on the external sloping side, at an interval of 51mm Centre to Centre, to a depth of 65 mm with GI anchor bolts and neoprene washers & subjecting the gutter beam to Schmidt, Hammer test to ensure the anchorage of the anchor bolts. The self-supported roofing system should be designed to with stand the wind load (As per IS 875 part-3) & Earthquake load (as per IS 1893) & the design should also comply with any other technical requirements such as turbo ventilators of 0.60 mts. dia and skylights of size 4.26 x 0.60 mts. fixed one in each row @ 10.00 Mtr C/C along the length & hangers for electrical fixtures as per the requirements including cost of all materials &labour for erection, all lead and lift, loading and unloading, HOM of	Sqm
13	KSRB 7.5 : Providing and fixing **pull and push type rolling shutters** of approved make out of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements for steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & outside locking with push & pull operations complete including pulling hooks, 4Nos. handles with all fittings and accessories, painted with a coat of red lead paint (without top cover) cost of materials, labour, HOM of machinery complete as per specifications. **Shutter size 3mx2.8 m**. Specification No. KBS 7.10 / 7.12. (**P.No. 31, I.No. 7.5 of CSR 2015-16**)	Sqm
14	KSRB 7.6 : Providing and fixing top covers made out of 20 guage M.S. sheet over pull and push rolling shutters bent to shape including cost of red lead primer coat of painting , materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 7.10.6 / 7.12	M
15	Providing flooring with 60 cms.x 60 cms. size Vitrified glazed tiles of approved quality & make, fixed on top of existing flooring fixed with suitable adhesive, including cutting the tiles to the required size and fixing etc., complete **Page No. 107, Item No. 14.44, PWD SR 2015-16**	Sqm
16	Providing and fixing Chorinated Poly Venyl Chloride (CPVC) pipes conforming to IS 15778, having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipe with clamp at 1.00 mtr spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and testing of joints complete. (internal work exposed on wall) - 20mm nominal OD pipes **Page No. 96, Item No. 13.85.2, PWD SR 2015-16**	M
17	Providing and fixing gun metal wheel valve conforming to IS specification of approved make as per directions including all lead and lift etc., complete. - for 15mm dia:	Each
18	KSRB 13-11.1 : Providing and placing on terrace, polyethylene water storage tanks with manhole lid and suitable locking arrangements, making holes of suitable diameter for inlet, outlet and over flow pipes, including cost of all materials, labour, transport charges, HOM of equipments and testing complete as per specifications. **(For 1000 litre capacity) Specification No.KBS 13.22 Page No. 94, Item No. 13.78, PWD SR 2015-16**	Nos
19	1HP / 7.5 KW Atlanta / Suguna / CRI / Kirloskar / other equivalent Pumps Page No. XXXXII, Item No. 1, PWD SR 2015-16	Cum

		0.00	100.00	0.00	0.00	0.00
		0.00	1800.00	0.00	0.00	0.00
		0.00	2500.00	0.00	0.00	0.00
		0.00	500.00	0.00	0.00	0.00
		16.64	900.00	14976.00	16.64	14976.00
		0.00	120.00	0.00	0.00	0.00
		0.00	220.00	0.00	0.00	0.00
		0.00	8500.00	0.00	0.00	0.00
		0.00	12000.00	0.00	0.00	0.00

20	**Providing R.O. Plant**	
	Providing revsrse osmosis suystem to cover 2000 Liters of High TDS water per hour	
	TECHNICAL SPECIFICATIONS	
	Flow Rate:	
	Feed Water : 5000 LPH	
	Treated Water : 3000 LPH	
	Reject Water : 2000 LPH	
	RAW WATER PUMP	
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for filter?	
	SAND MEDIA FILTER	
	Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the members	
	ACTIVATE CARBON FILTER	
	Purpose:- To remove the total color, smell, odor from the water.	
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & Accessories : Pipe of PVC 10 Bar tested pressure testing cock & pressure gauges at intlet - outlet of system	
	DOSING SYSTEM	
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes	
	MICRON FILTER	
	Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.	
	HIGH PRESSURE PUMP	
	Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery	
	RO membrane housing.	
	Purpose : To pack membrane and operate at high pressure.	
	RO MEMBRANES	
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.	
	RO CLEANSING SYSTEM	
	ELECTRICAL PANEL	
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.	
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.	
	INSTRUMENTATION	
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO system	
	PH DOSING SYSTEM	
	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.	Nos
	ELECTRIFICATION	
21	Supplying and wiring adopting loop system in existing PVC Conduit / casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 X1.5Sq.mm Cable confirming to the GTP, with a 6Amps flush type SP control switch shall be fixed on the existing plastic sheet / gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet. GROUP A b) Medium point above 3Mtr upto 6Mtr from tapping point to out let via switch etc., complete and as per the directions of the Engineer-in-charge of the work	Point

				-	-	-
				-	-	-
				-	-	-

22	c) Long point above 6Mtr upto 10Mtr from tapping point to out let via switch	Point
23	Supplying and flush mounting teak wooden box without front plank, made of not less than 12mm thick wood, after due groove cutting, Finishing with necessary cement plastering complete (1.6.5) 4"x4"x3" (101x101x76mm) etc., complete and as per the directions of the Engineer-in-charge of the work	Each
24	(1.6.1) 12"x12"x3" (300x300x76mm)	Each
25	(1.6.3)10"x7"x3" (254x178x76mm)	Each
26	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc., and fixing on existing wooden or metal box using N.F. screws etc., complete and as per the directions of the Engineer-in-charge of the work	SqCM
27	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete. upto 50mm conduit in brick wall etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
28	Supplying heavy gauge PVC Conduit Pipe 19/20 mm dia 2 mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering up to the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
29	Supplying and fixing PBBC/Bakelite straight or slant batten holder and wiring with 60w/230 volts lamps etc., complete and as per the directions of the Engineer-in-charge of the work	Each
30	Supplying patti type fluorescent tube light fitting of 2' - suitable for 14 watts fluorescent tube fitting, made out of M.S. Sheet and stove enameled with HF Electronic Ballast , locking type brass contact holders mounted on double fold type sheet base fully wired for use on 230 volts AC . Supply including T5 lamp etc., complete and as per the directions of the Engineer-in-charge of the work	Each
31	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single core wire in open or concealed system of wiring with specified IS-694:1990 & confirming to GTP of GROUP -A 1.5 sqmm etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
32	Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS lamp etc., complete and as per the directions of the Engineer-in-charge of the work	Each
33	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm dia etc., complete and as per the directions of the Engineer-in-charge of the work	No
34	Supplying of 1.1 KV LT UG cable having aluminum conductor PVC insulated, extruded inner sheathed, galvanized, steel strip (except 2CX10Sq.mm wire armoured) confirming to IS-3975:1990 (No. of Strip indicated in GTP) & extruded PVC outer sheathed armoured cable with specified IS-1554 Part-1:1988 & confirming to GTP of GROUP-A **P No. 52 / I No. 7.4.4 4 core 16 Sqmm KPWD Electrical SR 2014-15**	Mtr
35	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required.In existing trench/duct. **P No. 68 / I No. 7.8.1 6Sqmm to 16 Sqmm) KPWD Electrical SR 2014-15**	Mtr
36	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc., complete.(As per Civil SR KSRB I-2, P-7) **P No. 68 / I. No. 7.9.3 KPWD Electrical SR 2014-15**	Mtr
37	Supplying and fixing of class A (medium duty) GI pipe of wall thickness not less than 3.25mm on pole/wall/drain crossing with necessary clamping arrangements for UG cable of 1.1 KV **P. No. 68 / I No. 7.12.1 KPWD Electrical SR 2014-15**	Mtr
38	Supplying and fixing L.T. cast Iron pot heads suitable for 1.1 KV class UG cable filled with necessary bitumen/insulating compound complete with terminals, clamps, bolts, nuts and washers etc., **P. No. 69 / I.No. 7.13.2 KPWD Electrical SR 2014-15**	No.

		12.00	320.00	3840.00	12.00	3840.00
		20.00	50.00	1000.00	20.00	1000.00
		15.00	90.00	1350.00	15.00	1350.00
		18.00	70.00	1260.00	18.00	1260.00
		26666.00	0.22	5866.52	26666.00	5866.52
		60.00	20.00	1200.00	60.00	1200.00
		50.00	40.00	2000.00	50.00	2000.00
		2.00	70.00	140.00	2.00	140.00
		4.00	520.00	2080.00	4.00	2080.00
		30.00	10.00	300.00	30.00	300.00
		2.00	550.00	1100.00	2.00	1100.00
		2.00	2500.00	5000.00	2.00	5000.00
		40.00	100.00	4000.00	40.00	4000.00
		40.00	10.00	400.00	40.00	400.00
		30.00	70.00	2100.00	30.00	2100.00
		8.00	310.00	2480.00	8.00	2480.00
		2.00	240.00	480.00	2.00	480.00

39	Polythylene water storage tank of specified capacity and make	L
40	Providing and fixing Chorinated Poly Venyl Chloride (CPVC) pipes conforming to IS 15778, having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipe with clamp at 1.00 mtr spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and testing of joints complete. (internal work exposed on wall) - 20mm nominal OD pipes **Page No. 96, Item No. 13.85.2, PWD SR 2015-16**	M
41	Providing and Construction of pup panel cabin MS material vetical 50 x 100 mm thick tube, rafter 50 x 100 mm thick rectangle tube 50 x 50 mm thick tuve purlines, roof panel of 30 mm sandwitch puf panel density : 40 kg and wall panel of 30 mm sandwitch puf pannel density : 40 kgs (polyurethane foam) with noth side G I Colour coated sheet ancillaries like C-channels, angles, sealene etc, door of size 1.8 x 2.0 m an alluminium powder coated window of size 1.00 x 2.00 m 1 No of structural glazing (fixed and sliding One side slope as per elclosed drawing cabin of size etc (Approved Quoated Rate)	Each
	Sub Total	
	T P Inspection Charges @ 1%	
	BESCOM Deposit for RO Plant	
	Miscelaneous charges	
	Total	

CRTIFICATE:

1. Certified that the above work done satisfactory and no materials issued from Department

AE(W&S).N.D
AE(W&S)

		2000.00	5.00	10000.00	2000.00	10000.00
		50.00	104.00	5200.00	50.00	5200.00
		2.00	250204.80	500409.60	2.00	500409.60
				2259514.22		**2259514.22**

Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.